

EXHIBIT A



Failure Analysis Associates*

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Quinn C. Horn, Ph.D.
Managing Engineer

Education

Ph.D. in Metallurgical and Materials Engineering - November 1998
Michigan Technological University - GPA: 4.00/4.00

Ph.D. Dissertation: *Correlation Between Microstructure, Gas Evolution and Friability in Ferrosilicon Alloys*

BS and MS Degrees in Metallurgical Engineering - May 1993 and November 1995
Michigan Technological University - BS GPA: 3.88/4.00; MS GPA: 3.79/4.00

Masters Thesis: *Characterization of the Ti-Rich Portion of the Ti-In Phase Diagram*

Professional Credentials

Energizer/Eveready Battery Company - Westlake, Ohio 44145
Staff Technology Engineer I (11/98 – 7/02)

- Lead metallurgical engineer of the Microscopy and Materials Characterization Group at Energizer's corporate research and development facility.
- Selected materials and developed coating processes to minimize tooling wear, corrosion and subsequent contamination in alkaline battery production.
- Solved numerous failure analysis problems for battery manufacturing centers utilizing Scanning Electron Microscopy, Electron Probe Microanalysis, X-ray Diffraction, X-ray Fluorescence Spectroscopy, Metallography, Optical Microscopy, Real-Time X-ray Imaging, Interference Surface Profilometry, and physical testing equipment.

Physical Sciences, Incorporated - Andover, Massachusetts 01810
Principal Scientist (8/02 – 7/04)

- Developed low-temperature sintering technology for the fabrication of high chemical energy ballistics.
- Principal Investigator of the R&D effort that led to the first known demonstration of a working prototype battery with a three-dimensional, interpenetrating electrode architecture.
- Demonstrated the feasibility of using metal organic framework (MOF) materials as an absorption media for high energy density ammonia storage for use in portable fuel cell applications.
- Designed, built and demonstrated a 300 W chlor-alkali/peroxide hybrid electrochemical reactor for the simultaneous generation of chlorine gas and alkaline hydrogen peroxide as a fuel for COIL lasers.

Massachusetts Institute of Technology – Cambridge, Massachusetts 02139

Research Affiliate (9/04 – present)

- Collaborate with researchers in the Electrochemical Energy Laboratory in the Center for 21st Century Energy.
- Co-developed new gas diffusion electrodes for metal-air batteries and fuel cells.
- Supervise and direct efforts on electric vehicle program.

Professional Honors

Iron and Steel Society's Young Leaders Award (1997–1998); DeVleig Academic Fellowship (1997); Department of Defense Graduate Research Fellow (1994–1997); Forging Industry Education and Research Foundation's Forging Achievement Award (1992)

Materials Research Society (2001–Present); Electrochemical Society (1999–present); Tau Beta Pi (1992–present); Alpha Sigma Mu (1991–present); President of Alpha Chapter (1992–1993); ASM/TMS (1991–present)

Patent Applications

"Electrode for an Electrochemical Cell and Process for Making the Electrode," U.S. Patent Application No. 20040013940, filed January 22, 2004.

"Fiber Structures Including Catalysts and Methods Associated with the Same," U.S. Patent Application No. 20060019819, filed July 23, 2004 (with Y. Shao-Horn and J.P. Kurpiewski).

Publications

"Morphology and Spatial Distribution of ZnO Discharge Product in Commercial Zn/MnO₂ AA Batteries," *Journal of the Electrochemical Society*, Vol. 150, No. 5, pp. A652–A658, May 2003 (with Y. Shao-Horn).

"Nano-FeS₂ for Commercial Li/FeS₂ Primary Batteries," *Journal of the Electrochemical Society*, Vol. 149, No. 11, pp. A1499–A1502, November 2002 (with Y. Shao-Horn and S. Osmialowski).

"Reinvestigation of Cathodic Discharge Mechanisms in Lithium-FeS₂ Cells at Ambient Temperatures," *Journal of the Electrochemical Society*, Vol. 149, No. 12, pp. A1547–A1555, December 2002 (with Y. Shao-Horn and S. Osmialowski).

"Chemical, Structural and Electrochemical Comparison of Natural and Synthetic FeS₂ Pyrite in Lithium Cells," *Electrochimica Acta*, Vol. 46, pp. 2613, 2001 (with Y. Shao-Horn).

"The Effect of Magnesium Additions on the Evolution of PH_3 Gas from FeSi75 Alloys," Proceedings of the 56th Electric Arc Furnace Conference, New Orleans, LA, November 1998 (with R.W. Heckel and C.L. Nassaralla).

"Microstructural Study of Granulated Ferrosilicon with 75wt% Silicon," Proceedings of the INFACON 8 meeting, Beijing, China, June 1998 (with R.W. Heckel and C.L. Nassaralla).

"Reactive Phosphide Inclusions in Commercial Ferrosilicon," *Metallurgical Transactions*, Vol. 29B, No. 2, pp. 325–329, April 1998 (with R.W. Heckel and C.L. Nassaralla).

"Interaction of Ferrosilicon Alloys with the Environment," Proceedings of the Japan-U.S. Joint Seminar for Clean Steel for the 21st Century, pp. 97–102, Y. Iguchi (ed.), Futtsu, Chiba, Japan, April 25–27, 1996 (with R.W. Heckel and C.L. Nassaralla).

"Edge Instabilities in Thin Plates Studied by *In Situ* Transmission Electron Microscopy," *Ultramicroscopy*, Vol. 51, pp. 81–89, 1993 (with S.A. Hackney, T.M. Lillo, R.S. Kedia, and M.R. Plichta).

"Edge Instabilities in Thin Plates with Spatial Variations in Thickness," *Scr. Metall. Mater.*, Vol. 28, No. 3, 269–274, 1993 (with R.S. Kedia, T.M. Lillo, M.R. Plichta, and S.A. Hackney).

Presentations

"Anode and Cathode Templated Three-dimensional Lithium-Ion Batteries Based on Nano-fibrous Electrodes," Invited presentation, 208th Electrochemical Society Meeting, Los Angeles, CA, Fall 2005 (with K. White, A. Newman, J. Boehme, C. Middleton, R. Pawle, E. Middleton, J. Lennhoff, and Y. Shao-Horn).

"Lithium-Ion Batteries with Three-Dimensional Electrode Architectures," Invited presentation, Energizer Battery Company, Corporate Technology Center, Westlake, OH, May 3, 2005.

"Engineered Electrodes and Membrane Electrode Assemblies for PEM Fuel Cells," presented at the ASME Congress, Anaheim, CA, November 15, 2004 (with J.P. Kurpiewski and Y. Shao-Horn).

"Storage of Ammonia in Metal Organic Frameworks," Invited presentation, Nano Materials for Defense Applications Meeting, Maui, Hawaii, February 2004 (with A. Rose, A. Hunter, G. Harris, and J.D. Lennhoff).

"Three-Dimensional Cathode Materials from Electrospinning," Presented at the 204th Electrochemical Society Meeting, Orlando, Florida, Fall 2003 (with K.C. White, E. Salley, and J.D. Lennhoff).

"Three Dimensional Lithium Ion Batteries Based on Non-Woven Carbon Fabrics," Presented at the 204th Electrochemical Society Meeting, Orlando, Florida, Fall 2003 (with K.C. White, Y. Shao-Horn, and J.D. Lennhoff).

“Morphology and Spatial Distribution of ZnO Discharge Product in Commercial Zn/MnO₂ AA Batteries,” Poster presentation at the International Battery Association/Hawaii Battery Conference Joint Meeting, Waikola Beach Resort, Hawaii, January 2003 (with Y. Shao-Horn).

“The Effect of Magnesium Additions on the Evolution of PH₃ Gas from FeSi75 Alloys,” Presented at the 56th Electric Arc Furnace Conference, New Orleans, LA, November 1998 (with R.W. Heckel and C.L. Nassaralla).

“Microstructural Study of Granulated Ferrosilicon with 75wt% Silicon,” Presented at the INFACON 8 meeting, Beijing, China, June 1998 (with R.W. Heckel and C.L. Nassaralla).

“Reactive Phosphides in Commercial Ferrosilicon,” Presented at the Iron and Steel Making Conference, Chicago, IL, April 1997 (with R.W. Heckel and C.L. Nassaralla).

“Interaction of Ferrosilicon Alloys with the Environment,” Presented at the Japan-U.S. Joint Seminar for Clean Steel for the 21st Century, Futtsu, Chiba, Japan, April 25–27, 1996 (with R.W. Heckel and C.L. Nassaralla).